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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/550,482 | 10/13/2006 | Yingfu Li | 11582-004-999 | 2965 |

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222 EAST 41ST ST
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| EXAMINER | |
|---|---|
| JARRELL, NOBLE E | |
| ART UNIT | PAPER NUMBER |
| 1624 | |
| MAIL DATE | DELIVERY MODE |
| 08/19/2008 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/550,482 | LI ET AL. | |
| | Examiner | Art Unit | |
| | Noble Jarrell | 1624 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *19 May 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *9,10,12-19 and 21* is/are rejected.

7)☒ Claim(s) *1-8,11 and 20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election with traverse of group I in the reply filed on 5/19/2008 is acknowledged. The traversal is on the ground(s) that unity of invention exists. This is not found persuasive because compounds of groups I, V, VIII, and XI each require separate structural queries. Separate structural queries are required because each group represents compounds with different core structures. For example, group I requires the presence of an N-azabicyclo[2.2.2]ocy-3-yl group for variable $R^4$, and group V requires the presence of a piperdine ring for variable $R^4$.

The requirement is still deemed proper and is therefore made FINAL.

### *Claim Objections*

2. Claims 1-11 and 20 are objected to because of the following informalities: they contain non-elected subject matter. Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 9-10, 12-19 and 21 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the treatment of asthma and granulomas, does not reasonably provide enablement for the simultaneous treatment and prevention of disorders related to CCR3, treatment or prevention of all disorders related to CCR3, and the prevention of asthma. The specification does not enable any person skilled in the art to which it pertains, or

with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims. Applicants are enabled for the treatment of asthma or a granuloma.

> The factors to be considered in determining whether a disclosure meets the enablement requirements of 35 U.S.C. 112, first paragraph, have been described in *In re Wands*, 858 F.2d 731, 8 USPQ2d 1400 (Fed. Cir., 1988). The court in Wands states, "Enablement is not precluded by the necessity for some experimentation, such as routine screening. However, experimentation needed to practice the invention must not be undue experimentation. The key word is 'undue', not 'experimentation'" (*Wands*, 8 USPQ2sd 1404). Clearly, enablement of a claimed invention cannot be predicated on the basis of quantity of experimentation required to make or use the invention. "Whether undue experimentation is needed is not a single, simple factual determination, but rather is a conclusion reached by weighing many factual considerations" (*Wands*, 8 USPQ2d 1404). Among these factors are: (1) the nature of the invention; (2) the breadth of the claims; (3) the state of the prior art; (4) the predictability or unpredictability of the art; (5) the relative skill of those in the art; (6) the amount of direction or guidance presented; (7) the presence or absence of working examples; and (8) the quantity of experimentation necessary.

Consideration of the relevant factors sufficient to establish a *prima facie* case for lack of enablement is set forth herein below:

*(1) The nature of the invention and (2) the breadth of the claims:*

The claims are drawn to a method of inhibiting CCR3 receptors with compounds where an N-azabicyclo[2.2.2]ocy-3-yl group connected to a $SO_2$-phenyl-(O or S)-phenyl structure. Thus, the claims taken together with the specification imply the prepared compounds inhibit CCR3 in the treatment of asthma or a granuloma..

*(3) The state of the prior art and (4) the predictability or unpredictability of the art:*

Ponath (*Expert Opinion on Investigational Drugs*, **1998**, *7(1)*, 1-18) teaches that CCR3 is linked to treatment of granulomas (section 1.2, page 4).

Bertrand et al. (*Expert Opinion on Investigational Drugs*, **2000**, *9(1)*, 43-52) teach that inhibition of CCR3 is linked to asthma (see abstract).

Asthma is preventable through modification of environmental factors, not through administration of drugs ("NAEP's asthma bulletin board", http://www.asthma.co.za/news01.htm, accessed August 5, 2008).

*(5) The relative skill of those in the art:*

Those of relative skill in the art are those with the level of skill of the authors of the references cited to support the examiner's position. The relative skill of those in the art are MD's, PhD's, or those with advanced degrees and the requisite degree of experience in therapeutic methods for treating disorders related to CCR3 receptors.

*(6) The amount of direction or guidance presented and (7) the presence or absence of working examples:*

The specification has provided guidance for treatment of granulomas through inhibition of a CCR3 receptor and the treatment of asthma through the same receptor.

However, the specification does not provide guidance for one, simultaneous treatment and prevention of a disease related to CCR3, and two, the prevention of asthma.

*(8) The quantity of experimentation necessary*:

Considering the state of the art as discussed by the references above, particularly with regards to claims 9-10, 12-19, and 21, and the high unpredictability in the art as evidenced therein, and the lack of guidance provided in the specification, one of ordinary skill in the art would be burdened with undue experimentation to practice the invention commensurate in the scope of the claims.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 12, 16-19, and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim(s) 12, 16-19, and 21 are interpreted as reachthrough claims. Applicants cite (page 8, lines 23-30) various disorders that are associated with CCR3, including asthma, rhinitis, and allergic diseases, among others. These claims are unclear as to what disorder or disease is being treated because many diseases are related to CCR3 inhibition and applicant has not particularly point out the identity of the specific "related" diseases applicant intends to treat. The test for determining compliance with 35 USC 112, paragraph two, is whether applicants have clearly defined “their” invention not what may be discovered by future research as this type of claim language clearly requires.

***Conclusion***

7. No claims are allowed.

8. The elected group of compounds appears free of the prior art of record.

9. The closest prior art is a structure with registry number 1027957-09-0 (displayed in STN search). In this structure, variable $R^4$ is a NH-azabicyclo[2.2.2]ocy-3-yl group, and variables $R^1$ and $R^2$ are each chloro atoms. However, this structure was entered into STN on 13 June 2008, which is after the effective filing date of the instant application (11 March 2004). Therefore, compounds of the elected group are not anticipated or rendered obvious.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Noble Jarrell whose telephone number is (571) 272-9077. The examiner can normally be reached on M-F 7:30 A.M - 6:00 P.M. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. James O. Wilson can be reached on (571) 272-0661. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Noble Jarrell/
Examiner, Art Unit 1624

**/James O. Wilson/**
**Supervisory Patent Examiner, Art Unit 1624**